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10/582,657

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Ari Pekkarinen

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EXAMINER

CHEN, XIAOLIANG

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,657	<b>Applicant(s)</b> PEKKARINEN ET AL.	
	<b>Examiner</b> XIAOLIANG CHEN	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10-14 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 17-22 is/are rejected.
- 7) ☒ Claim(s) 7 and 10-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06-21-10 has been entered.

### ***Amendment***

2. Acknowledgement is made of Amendment filed 06-21-10.
3. Claims 1, 7, 14, 21 and 22 are amended.
4. Claims 2, 3, 8, 9, 15 and 16 are canceled.

### ***Response to Arguments***

5. Applicant's arguments with respect to newly amended parts of claims 1, 21 and 22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objection***

6. Claims 7, 10, 12, 21 and 22 are objected because

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Claim 7 has limitations of “electroconductive material” and “the electroconductive material” in line 4, and “an electroconductive material” in line 10.

(Suggestion: should be “an electroconductive material” and “the electroconductive material” in line 4, and “the electroconductive material” in line 10).

Claim 10 has limitations of “the electroconductive material” in line 2, and “electroconductive material” in line 3.

(Suggestion: should be “the electroconductive material” in line 2, and “the electroconductive material” in line 3).

Claim 12 has limitations of “the electroconductive material” in line 2, and “electroconductive material” in line 3.

(Suggestion: should be “the electroconductive material” in line 2, and “the electroconductive material” in line 3).

Claim 21 has the limitations of “electroconductive material” in line 7, and “an electroconductive material” in line 8.

(Suggestion: should be “an electroconductive material” in line 7, and “the electroconductive material” in line 8).

Claim 22 has two limitations of “an electroconductive material” in lines 8 and 11.

(Suggestion: should be “an electroconductive material” in line 8, and “the electroconductive material” in line 11).

It is not clear whether the second of “electroconductive material” and “an electroconductive material”, or two of “an electroconductive material” are the same as or

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different; and if they are different, should use "first" and "second" electroconductive material to distinguish them clearly.

For examining purpose only, read as in the suggestions.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the new amended claim 22, the limitation of "a second apparatus through which said projection extends" is a new matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 4-6 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jokinen et al. (US20030201983) in view of Nakajima (US20040067015).

**Re Claim 1**, Jokinen show and disclose

An apparatus comprising:

A key (313) having a projection (315, fig. 3a),

a photoconductor (350, fig. 3c) having a surface (top) and provided with a first aperture (256, fig. 2) that extends through said photoconductor and a second aperture (361, fig. 3c) through which said projection extends (fig. 3c), and

a circuit board (370, fig. 3c), wherein

a ground plane (the circuit board used for a mobile station must have a plane, trace, conductor, or circuit patter of ground in the circuit board),

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said projection of said key is configured to press on said circuit board through said second aperture (fig. 3c),

Jokinen does not disclose

said photoconductor is provided with an electroconductive material at least around the edges of said first aperture, which material is induced on said surface of the photoconductor, and is connectable to the ground plane in order to conduct electrostatic discharges through the electroconductive material to the ground plane,

Nakajima teaches a device wherein

said photoconductor (212) is provided with an electroconductive material (metal layer 222, fig. 64) at least around the edges of said first aperture (ring shaped via, fig. 64), which material is induced (222 is metal layer, an electroconductive material) on said surface of the photoconductor (fig. 64), and is connectable (since it is a metal via) to the ground plane in order to conduct electrostatic discharges through the electroconductive material to the ground plane,

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the metal layer of the ring shaped via in holes of the photoconductor as taught by Nakajima in the first holes of the photoconductor of electronic device of Jokinen, in order to have better protection of the photoconductor when mounting (since the first hole is a mounting hole), and to added possible connections (since it is metal via hole) to the circuit board

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in the electronic device; e.g. connecting components or circuits, shielding noise or discharge static for the electronic device.

**Re Claim 4**, Jokinen and Nakajima disclose

The apparatus according to claim 1, wherein the electroconductive material (metal layer 222, fig. 64, Nakajima) induced on said surface of the photoconductor is integrated with the photoconductor (212, fig. 64, Nakajima) as the layer of electroconductive material for conducting light in the photoconductor (a transparent substrate 212 [0204], Nakajima) and for shielding the light source against electrostatic pulses (connecting the electroconductive material to the grounding plane, see claim 1, would achieve shielding of the noise in the electronic device).

**Re Claim 5**, Jokinen and Nakajima disclose

The apparatus according claim 1, wherein the electroconductive material is metal (metal layer 222, fig. 64) and is connectable to the ground plane through the electroconductive material (see claim 1).

**Re Claim 6**, Jokinen and Nakajima disclose

The apparatus according to claim 1, wherein the electroconductive material is realized on the surface of the photoconductor by means of an electroconductive film (metal film [0198], Nakajima), or by inducing chemically or electrochemically.

**Re Claim 21**, Jokinen show and disclose

A method comprising:



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placing a light emitting diode (light emitting diodes [0029]) on a printed circuit board (370, fig. 3c) with a ground plane (the circuit board used for a mobile station must have a plane, trace, conductor, or circuit pattern of ground in the circuit board),

arranging a photoconductor layer (350, fig. 3c) on a component side (top) of the circuit board, the photoconductor layer provided with a first aperture (256, fig. 2) that extends through said photoconductor and a second aperture (361, fig. 3c) through which a projection (315, fig. 3c) of a key (313, fig. 3c) extends,

pressing on the circuit board by said projection of said key extending through said second aperture (fig. 64),

Jokinen does not disclose

providing an electroconductive material at least around the edges of the first aperture, inducing the electroconductive material to the photoconductor layer,

Nakajima teaches a device wherein

providing an electroconductive material (metal layer 222, fig. 64) at least around the edges of the first aperture, inducing the electroconductive material to the photoconductor layer (fig. 64),

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the metal layer of the ring shaped via in holes of the photoconductor as taught by Nakajima in the first holes of the photoconductor of electronic device of Jokinen, in order to have better protection

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of the photoconductor when mounting (since the first hole is a mounting hole), and to added possible connections (since it is metal via hole) to the circuit board in the electronic device; e.g. connecting components or circuits, shielding noise or discharge static for the electronic device,

Jokinen and Nakajima disclose the claimed invention except for connecting the electroconductive material to the ground plane of the circuit board in order to conduct electrostatic discharges from the electroconductive material to the ground plane of the circuit board, however, the electroconductive material is a metal layer and it would have been obvious to one having ordinary skill in the art at the time the invention was made to connecting the metal layer on the photoconductor to the ground layer of the circuit board in order to achieve the noise shielding or static discharging for the electronic device, since connecting a metal layer to the ground plane of the circuit board would make a better shielding for the electronic device is well known and common in the art.

**Re Claim 17**, Jokinen show and disclose

The method according to claim 21, wherein on the outermost surface (top) of the photoconductor layer, facing away from the circuit board (fig. 3c), Jokinen does not disclose

on the surface of the photoconductor layer, there is integrated a layer of electroconductive material, which layer covers the whole surface of the photoconductor layer,

Nakajima teaches process method wherein

on the surface of the photoconductor layer, there is integrated a layer of electroconductive material (metal layer of 240, fig. 73), which layer covers the whole surface of the photoconductor layer (fig. 73).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the plating metal layer over the electroconductive material as taught by Nakajima in the electronic device of Jokinen, in order to use the process method to process the plating electrode plate on the electroconductive material of the electronic device (Nakajima, Para. [0213]).

**Re Claim 18**, Jokinen and Nakajima disclose

The method according to claim 17, wherein the electroconductive material is induced for shielding components of the circuit board against electrostatic pulses (connecting the electroconductive material to the grounding plane, see claim 21, would achieve shielding of the noise in the electronic device) and for conducting the light emitted by the light emitting diode of the circuit board in the photoconductor layer.

**Re Claim 19**, Jokinen and Nakajima disclose

The method according to claim 21, wherein the electroconductive material is metallized (metal layer 222, fig. 64, Nakajima) to the photoconductor layer and connected to the ground plane of the circuit board by electroconductive material (the electroconductive material connected to the ground plane, see claim 21).

**Re Claim 20**, Jokinen and Nakajima disclose

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The method according to claim 21, wherein the electroconductive material is realized in the photoconductor layer by means of an electroconductive film (metal film [0198], Nakajima), or by inducing chemically or electrochemically.

***Allowable Subject Matter***

11. Claims 7 and 10-14 are objected to as being objected above, but would be allowable if the errors in the claims 7, 10 and 12 being corrected.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 7 and all claims dependent thereof are allowable because the prior art of record neither anticipates nor renders obvious the limitations of the claim in combination as claimed, including:

wherein the photoconductor layer includes an electroconductive material, and that the electroconductive material is connectable to the ground plane, wherein the photoconductor layer is provided with a first aperture that extends through said photoconductor layer, the light emitting diode at least partly placed in the first aperture, inside the photoconductor layer, and the photoconductor layer also provided the electroconductive material at least around the edges of the first aperture, and further comprising a key having a projection extending through a second aperture provided on said photoconductor layer, said projection configure to press on said circuit board.

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The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said claim 7 and all claims dependent thereof patentable over art of record.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US-20030007448 US-20030020064 US-20010049207 US-20020187570 US-6648530 US-5178722.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiaoliang Chen whose telephone number is (571)272-9079. The examiner can normally be reached on 8:00-5:00 (EST), Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinhee Lee can be reached on 571-272-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Xiaoliang Chen  
Examiner  
Art Unit 2841

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Examiner, Art Unit 2841